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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,530	08/14/2001	John Peterson		1712

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06/18/2003

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EXAMINER

NGUYEN, HUNG

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

Applicant(s)

09/930,530

PETERSON ET AL.

Examiner

Art Unit

Hung Henry V Nguyen

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed 4/25/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-76 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-13, 16-21, 23-26, 28-33, 37, 48-53, 55 and 57-71 is/are rejected.
- 7) ☒ Claim(s) 7, 14, 15, 22, 27, 34-36, 38-47, 54, 56 and 72-76 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114.

Applicant's submission filed on April 25, 2003 has been entered.

Claim Objections

2. There are two "claim 33" (see page 8 of the Preliminary Amendment). Correction action is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-6, 8-9, 16-18, 32-33, 40, 48-50, 57-64, 69-71 are rejected under 35 U.S.C. 102(e) as being anticipated by Ebihara et al (U.S.Pat. 6,323,935).

With respect to claims 1-6, 8-9, 16-21, 29-33, 40, 48-52, 57-64, 69-71, Ebihara discloses an stage device (10)/and corresponding method comprising all of the basic structures as set forth in the instant claims such as: a base structure (12) that retains the stage (14); a X driving system (22)/X mover connected to the stage and moving the stage along in the X direction; a Y driving system/Ymover (60,70) for driving the stage along the Y direction; a measurement system (15) for monitoring the stage, the measurement system having a first X system (50X1) for providing a first X position signal and indicating the position of the stage along the X direction when the stage is in the first position; and a second X system (50X2) for providing a second X position signal and indicating the position of the stage along the X direction when the stage is in the second position; and Yaxis interferometer (50Y) for detecting position information of the device table along the Y direction; and a control system (16) for receiving the position signals from the measurement system and directing the appropriate drive signals for moving the stage as desired(see fig.1-2, and col.9, lines 45-58). Ebihara further teaches a direct servo or indirect servo control system (see col.13, lines 62 through col.14) for controlling the stage mover assembly wherein one servo cycle lasts between 0.1 to 1.0mm (see col.17, lines 5-7 and 33-40) and the stage is moved at constant velocity in the X axis direction “while switching from the first X system to the second X system” (see col.21, lines 6-7); and “controlling the position

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information IFY, IFX1, IFX2 every 1millisecond from each of the interferometers" which can be regarded as "a predetermined number of servo cycles in the transition region", as claimed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-13, 19-22, 23-26, 28-31, 51-53, 55, 57-59, 65-71 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ebihara et al (U.S.Pat. 6,323,935) in view of Makinouchi et al (U.S.Pat. 6,259,511).

With regard to claims 9-13, 19-22, 23-26, 28-31, 51-53, 55, 57-59, 65-71, Ebihara et al discloses an stage device comprising substantially all of the limitations of the instant claims as discussed except for the second and/or third Y systems for monitoring the positions of the device in the Y direction. Makinouchi teaches a stage device having three Y interferometers (14, y1, 14y2 and 23) for monitoring longer stroke of a stage. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Ebihara and Makinouchi to obtain the invention as specified in the instant claims. It would have been obvious to a skilled artisan to employ two or three Y interferometers as taught by Makinouchi into the stage device of Ebihara for monitoring the positions of the stage in the Y direction. It is well known per se that the purpose of doing so would have been to improve the accuracy of

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positioning of the stage which have a longer stroke between the alignment area and the exposing area.

Allowable Subject Matter

5. Claims 7, 14-15, 22, 27, 34-36, 38-39, 40-47, 54, 56, 72-76 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


6. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record does not specifically teach a stage assembly where a control system is connected to the movers of the device table and a measurement system and is designed to switch position signals between the interferometers of the measurement system within one servo cycle or the control system does not direct current to the stage mover assembly for at least one servo cycle when the device table is in the transition region, as recited in the instant claims.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V Nguyen whose telephone number is 703-305-6462. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

hvn
June 14, 2003


HENRY HUNG NGUYEN
PRIMARY EXAMINER